

REMARKS

Reconsideration and allowance of this application are respectfully requested in light of the above amendments and the following remarks.

Applicants acknowledge with appreciation the indication in the Office Action that claims 9-12 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Supplemental to the Summary of Substance of Telephone Interview filed on July 26, 2011, the Applicants have amended independent claims 1 and 4 in the manner agreed upon to overcome the current rejections. Specifically, claim 1 has been amended and now recites the features of:

“1. (Currently Amended) A modulation apparatus comprising:

a first frequency-increasing single side band (SSB) modulator that performs SSB modulation on a first input symbol to obtain an upper side band (USB) signal;

a second frequency-increasing SSB modulator that performs the SSB modulation on a second input symbol to obtain a lower side band (LSB) signal; and

a combiner that combines the USB signal and the LSB signal,

wherein the second frequency-increasing SSB modulator performs SSB modulation to obtain the LSB signal using a carrier frequency, the carrier frequency being higher than a carrier frequency used in the first frequency-increasing SSB modulator by a symbol frequency of the first input symbol and the second input symbol, such that the LSB signal and the USB signal are multiplexed in the same frequency band,

wherein the first frequency-increasing SSB modulator comprises a first Hilbert transformer and obtains the USB signal by multiplying a signal output from the first Hilbert transformer by a signal comprising a sine curve with a frequency $(\omega_{1(\text{first})} - \omega_{0(\text{first})}/2)$,

wherein the second frequency-increasing SSB modulator comprises a second Hilbert transformer and obtains the LSB signal by multiplying a signal output from the second Hilbert transformer by a signal comprising a sine curve with a frequency $(\omega_{1(\text{second})} + \omega_{0(\text{second})}/2)$, and

wherein $\omega_{0(\text{first})}$ is the symbol frequency of the first input symbol, $\omega_{0(\text{second})}$ is the symbol frequency of the second input symbol, $\omega_{1(\text{first})}$ is the carrier frequency used in the first frequency-increasing SSB modulator, and $\omega_{1(\text{second})}$ is the carrier frequency used in the second frequency-increasing SSB modulator.”

Support for the amendments is provided, for example, in paragraphs [0064]-[0069] and FIG. 5 of the published U.S. application.

As agreed upon during the telephone interview conducted on July 26, 2011, neither Daoud et al. (US 4,835,791) nor Muzzi et al. (US 3,628,155), whether considered individually or in combination, teach or suggest the above-noted features recited by amended claim 1.

Accordingly, the Applicants submit that the teachings of Daoud and Muzzi, even if combined as proposed in the Office Action, still would lack the above-noted subject matter of claim 1 and thus these references, considered individually or in combination, do not render obvious the subject matter defined by claim 1. Claim 4 has been amended and now similarly recites the above-mentioned subject matter distinguishing apparatus claim 1 from the applied references, but with respect to a method. Therefore, allowance of claims 1 and 4 and all claims dependent therefrom is warranted.

In view of the above, it is submitted that this application is in condition for allowance, and a notice to that effect is respectfully solicited.

If any issues remain which may best be resolved through a telephone communication, the Examiner is requested to telephone the undersigned at the local Washington, D.C. telephone number listed below.

Respectfully submitted,

/James Edward Ledbetter/

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JEL/DEA/att

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